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10/557,636

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Sjoerd Stallinga

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EXAMINER

BIBBINS, LATANYA

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/557,636             | STALLINGA, SJOERD   |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | LaTanya Bibbins        | 2627                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 11-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17, 19, 23 and 24 is/are allowed.
- 6) ☒ Claim(s) 11-16, 18 and 20-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. In the remarks filed on September 25, 2008, Applicant amended claims 11-24, cancelled claims 1-10, and submitted arguments for allowability of pending claims 11-24.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 11-16, 18 and 20-22 have been considered but are moot in view of the new grounds of rejection.

### ***Specification***

3. The disclosure is objected to because of the following informalities:

Page 3, line 25 states "...an alternative embodiment of an adaptive signal **processing.**" The examiner believes that this should actually read --an adaptive signal **processor**--.

Appropriate correction is required.

### ***Drawings***

4. The drawings are objected to because
  - a. The paragraph on page 8, between lines 15-19 refers to element 110B as the third controllable filter device and the fourth controllable filter device. (see page 6 of the amendment filed September 25, 2008)
  - b. Page 12, line 30 states the reference labels 311a-311d and 411a-411d, which are not clearly labeled in the figures.

- c. Page 13, lines 17 & 18 states the reference symbol "s", i.e. lower-case 's' which is not consistent with the figures.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**6. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (USPGPub Number 2002/0080700 A1) in view of Eastman et al. (US Patent Number 5,859,830).**

**Regarding claim 11**, Watanabe discloses an optical disc drive, comprising: an optical system (figure 1) for scanning an optical disc (figure 1, item 12) with a light beam (figure 1, item 11), the optical system comprising an optical detector (figure 1, item 15) for receiving light reflected by the optical disc (paragraph 97); a radial actuator (figure 1, item 9) for radially displacing a focal spot of the light beam (paragraphs 93-95); a control circuit (figure 1) having an input (figure 1, items 20a-20d) for receiving an output signal of said optical detector (paragraph 97), and having an output for generating a control signal for said radial actuator (paragraph 99); wherein said control circuit is capable of operating in at least a first operating mode (paragraphs 136-138; startup mode) wherein said control signal for said radial actuator is generated on the basis of a tracking error signal derived from wobble-induced signal components of said optical detector output signal (paragraphs 97-99 & 136-138).

Watanabe fails to disclose, while Eastman discloses that the tracking error signal derived from wobble-induced signal components of said optical detector output signal uses a band-pass filter centered at a wobble frequency (see the band-pass filter, element 150 of Figure 9 and the corresponding discussion in column 11 line 10 - column 12 line 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Eastman into that of

Watanabe. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to eliminate unwanted noise outside the bandwidth of interest (Eastman column 11 lines 36 and 37) and produce a dynamic tracking error signal utilized to adjust a tracking actuator to keep the recording beam on track (Eastman column 12 lines 1-4).

**Regarding claim 12**, Watanabe further discloses wherein said control circuit is capable of processing said optical detector output signal for calculating a tracking error signal depending on a delay between signal components (paragraph 99).

**Regarding claim 13**, Watanabe further discloses wherein said optical detector is a four-segment detector (figure 2, item 15).

**Regarding claim 14**, Watanabe further discloses wherein said control circuit is capable of operating in at least a second operating mode (figure 8, 1x, 2x, 4x; paragraphs 148-150) wherein said control signal for said radial actuator is generated on the basis of a tracking error signal derived from data-induced signal components of said optical detector output signal (paragraphs 97-98).

**7. Claims 15, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (USPGPub Number 2002/0080700 A1) in view of Eastman et al. (US Patent Number 5,859,830), as applied to claim 14 above, and further in view of Furuyama (US Patent Number 4847708).**

**Regarding claim 15**, the combination of Watanabe and Eastman disclose the features of base claim 14, as stated in the 103 rejection above, but fail to specifically

disclose wherein said control circuit is adapted to monitor said optical detector output signal, and to operate in said first operating mode when said optical detector output signal indicates an unwritten track, and to operate in said second operating mode when said optical detector output signal indicates a written track.

Furuyama, however, discloses an optical disc drive, comprising: an optical system (column 6, lines 44-48) for scanning an optical disc (column 6, lines 28-37) with a light beam (column 6, lines 30-31; LD), the optical system comprising an optical detector for receiving light reflected by the optical disc (column 6, lines 49-54; must be a detector); a radial actuator for radially displacing a focal spot of the light beam (column 7, lines 27-34); a control circuit (figure 1) having an input (figure 1, items 20a-20d) for receiving an output signal of said optical detector (paragraph 97), and having an output for generating a control signal for said radial actuator (paragraph 99); wherein said control circuit is capable of operating in at least a first operating mode (column 16, lines 9-36; recording mode); wherein said control circuit is capable of operating in at least a second operating mode (column 6, lines 49-54; reproduction mode); wherein said control circuit is adapted to monitor said optical detector output signal (figure 10, S62), and to operate in said first operating mode when said optical detector output signal indicates an unwritten track (column 16, lines 23-27; columns 13-15 describe the process of figure 10 to determine an unrecorded track address suitable for a new recording), and to operate in said second operating mode when said optical detector output signal indicates a written track (figure 4; column 9, lines 24-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide for the system of Watanabe and Eastman to operate in various modes based on the presence of an RF signal, as taught by Furuyama, because this is an obvious determination of the presence of a track applied to an optical system for the purpose of detecting the presence of recorded track to determine if the address is a suitable location for recording.

**Regarding claims 16 and 18,** Watanabe, Eastman and Furuyama disclose the features of base claim 15, as stated in the 103 rejection above. Furuyama further discloses wherein said control circuit is adapted to monitor the signal power of low-frequency signal components of said optical detector output signal (figures 3-5, S17 & S23), to compare the measured signal power with a predetermined reference level, and to operate in said first operating mode when said measured signal power is above/below said reference level (figures 3-5, S4 & S5 indicate an unwritten track when RF signal is NOT present), and to operate in said second operating mode when said measured signal power is below/above said reference level (figures 3-5, S4 & S5 indicate an unwritten track when RF signal is NOT present).

Furuyama fails to specifically disclose, with reference to claim 16, wherein when the reference is above a reference level to operate in a first operating mode, and when the reference is below a reference level to operate in a second operating mode. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a simple substitution of the thresholds which are



indicative of either an unwritten track or a written track, because this is an obvious variation which would yield the same expected results.

**8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (USPGPub Number 2002/0080700 A1) in view of Eastman et al. (US Patent Number 5,859,830), as applied to claim 14 above, and further in view of Kawabata et al. (US Patent Number 6,222,340).**

Regarding claim 20, the combination of Watanabe and Eastman disclose the features of claim 14, as stated in the 103 rejection above, but fails to specifically disclose wherein said control circuit has a first signal processing path for processing said optical detector output signal in said first operative mode, wherein said control circuit has a second signal processing path for processing said optical detector output signal in said second operative mode, and a controllable switch for selecting either said first signal processing path or said second signal processing path.

Kawabata, however, discloses an optical disc drive, comprising: an optical system (figure 1) for scanning an optical disc (figure 1, item 57) with a light beam (figure 1, unlabeled), the optical system comprising an optical detector (figure 1, item 28) for receiving light reflected by the optical disc (column 10, lines 7-16); a radial actuator (figure 1, items 51, 56 & 57) for radially displacing a focal spot of the light beam (columns 7 & 8, lines 58-67 & 1-15); a control circuit (figure 1, item 1) having an input (figure 1, output of item 34) for receiving an output signal of said optical detector (column 10, lines 17-35), and having an output for generating a control signal for said

radial actuator (column 10, lines 37-40); wherein said control circuit has a first signal processing path (figure 1, item 22) for processing said optical detector output signal in said first operative mode (column 9, lines 46-59; A-phase), wherein said control circuit has a second signal processing path (figure 1, item 23) for processing said optical detector output signal in said second operative mode (column 9, lines 46-59; B-phase), and a controllable switch for selecting either said first signal processing path or said second signal processing path (columns 9 & 10, lines 46-67 & 1-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the control circuit of Watanabe and Eastman with two different paths for controlling the two different modes of the signal processing error correction, as taught by Kawabata, because this will help to drive the stepping motor with respect to two different signal and two different phases, as stated in column 9, lines 46-59.

**9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (USPGPub Number 2002/0080700 A1) in view of Eastman et al. (US Patent Number 5,859,830), as applied to claim 14 above, and further in view of Ohshita et al. (US Patent Number 6,317,394).**

Regarding claim 21, the combination of Watanabe and Eastman disclose the features of base claim 14, as stated in the 103 rejection above, but fail to specifically disclose wherein said control circuit comprises an input filter assembly having a controllable filter characteristic.

Ohshita, however, discloses an optical disc drive, comprising: an optical system for scanning an optical disc with a light beam (abstract), the optical system comprising an optical detector (column 7, lines 22-28) for receiving light reflected by the optical disc (column 7, lines 22-28); a radial actuator for radially displacing a focal spot of the light beam (abstract); a control circuit (figure 1, item 4) having an input (figure 1, item e<sub>1</sub>) for receiving an output signal of said optical detector (column 7, lines 28-38), and having an output for generating a control signal for said radial actuator (column 7, lines 55-60); wherein said control circuit comprises an input filter assembly having a controllable filter characteristic (columns 13 & 14, lines 1-13 and 7-14, respectively).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the control circuit for tracking error correction of Watanabe and Eastman with a controllable filter characteristic, as taught by Ohshita, because this will help the lowpass filters to adjust for large signal changes in the tracking, thus enabling further offset correction, as stated in columns 13, lines 62-67 and column 14, lines 1-6.

**10. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (USPGPub Number 2002/0080700 A1), Eastman et al. (US Patent Number 5,859,830) and Ohshita et al. (US Patent Number 6,317,394), as applied to claim 21 above, and further in view of Furuyama (US Patent Number 4847708).**

Regarding claim 22, the combination of Watanabe, Eastman and Ohshita disclose the features of claim 21, as stated in the 103 rejection above, but fail to

specifically disclose wherein said input filter assembly comprises at least one controllable filter device having a signal input coupled to a optical detector input of the control circuit, having a signal output, and having a control input, the controllable filter device being designed to pass signal components in a low-frequency range and to block signal components in a data-frequency range in response to a control signal received at its control input having a first value, the controllable filter device being designed to block signal components in said low-frequency range and to pass signal components in said data-frequency range in response to said control signal received at its control input having a second value.

Furuyama, however, discloses wherein said control circuit comprises an input assembly having a controllable characteristic (figure 3, S4 & S5); wherein said input filter assembly comprises at least one controllable device having a signal input coupled to a optical detector input of the control circuit (figure 1, S1), having a signal output (figure 3), and having a control input, the controllable input device being designed to pass signal components in a low-frequency range (figure 5, output 'NO' of S23) and to block signal components in a data-frequency range (figure 5, output 'YES' of S23) in response to a control signal received at its control input having a first value (figure 3; 'Detecting Start Position of Unrecorded Track'), the controllable input device being designed to block signal components in said low-frequency range (figure 4, output of 'NO' of S17) and to pass signal components in said data-frequency range (figure 4, output of 'YES' of S17) in response to said control signal received at its control input having a second value (figure 3; 'Detecting Start Position of Unrecorded Track').

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the input filter assembly of Watanabe, Eastman and Ohshita with the ability to pass RF data signals or to block RF data signals based on the operating mode, as taught by Furuyama, because this will provide for the system to perform the desired task based on the desired mode of operation (recording or reproducing), as displayed by figures 3-5 and fully explained in columns 8-10.

***Allowable Subject Matter***

**11. Claims 17, 19, 23 and 24** are allowed for the reasons indicated in the previous Office Action.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

**12.** Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571)270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LaTanya Bibbins/  
Examiner, Art Unit 2627

/Thang V. Tran/  
Primary Examiner, Art Unit 2627